MOS GB 0733-1
VEDEX 3300
M10528

INSTALLATION AND MAINTENANCE INSTRUCTIONS

VEDEX 3300

NIBE

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Thank you for relying on NIBE to supply your boiler and congratulations on choosing VEDEX 3300, a high quality firewood boiler with a long service life, developed and manufactured in Sweden for Swedish conditions.

In order to get the ultimate benefit from VEDEX 3300 you should read through these Installation and Maintenance Instructions. The numbers in brackets refer to the section "Component locations".

The boiler is designed for houses with water borne heating and is environmentally approved for accumulator tank firing.

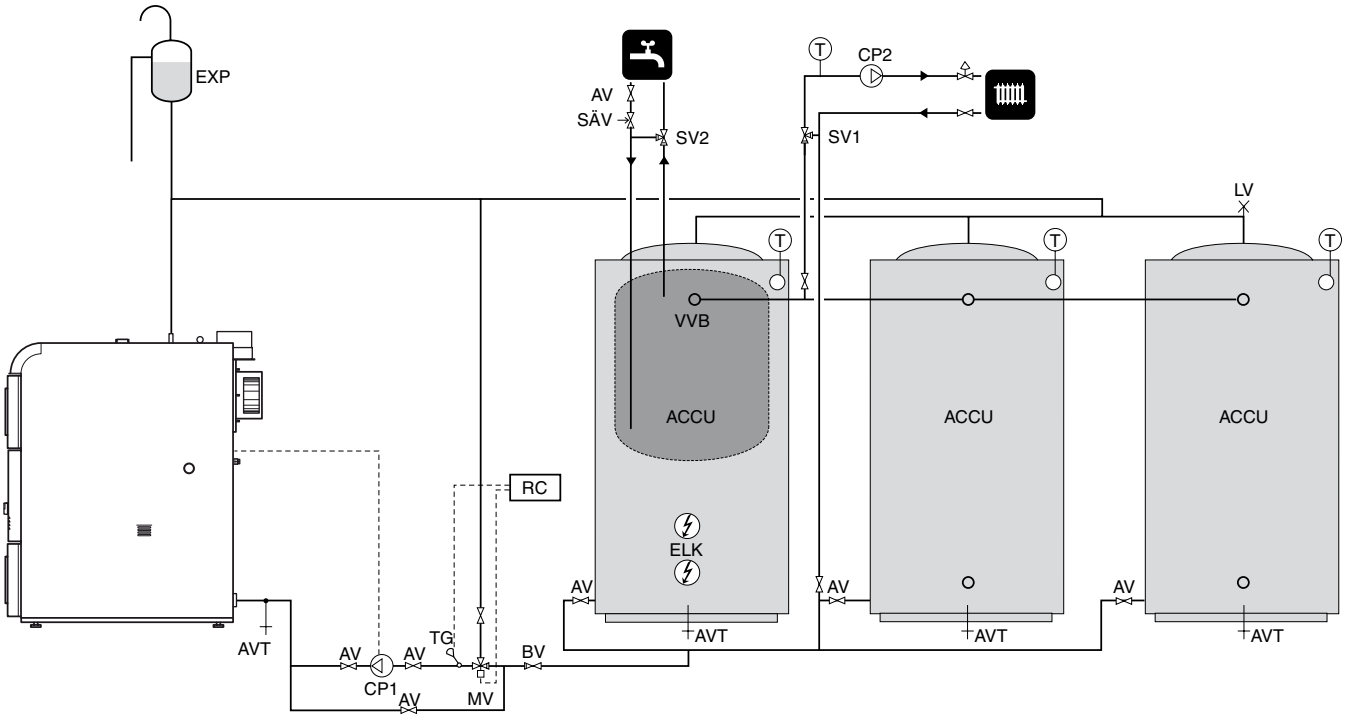
This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Installation data

To be filled in when the boiler has been installed

Installation date
Manufacturing number
Plumber

System diagram



The outline diagram shows components that are not included in standard deliveries.

Area of use

NIBE VEDEX 3300 is intended for heating domestic houses and other buildings.

The boiler is environmentally approved for wood firing to the accumulator tank. VEDEX 3300 can be set for pellet firing.

Product description

VEDEX 3300 is a wood-fired boiler with induction flue gas fan. Max. wood length is 0.5 m. The boiler is designed to be connected to an external water heater for heating domestic hot water.

When firing, the boiler water is partially heated by the hearth and partly by the flue gas ducts.

Average output during wood burning operation is approx. 35kW (max. output is approx. 40kW).

Hot water heating

An accumulator tank with integrated water heater or coil is needed for hot water heating.

The hot water capacity is determined by the choice of water heater size or the length of coil.

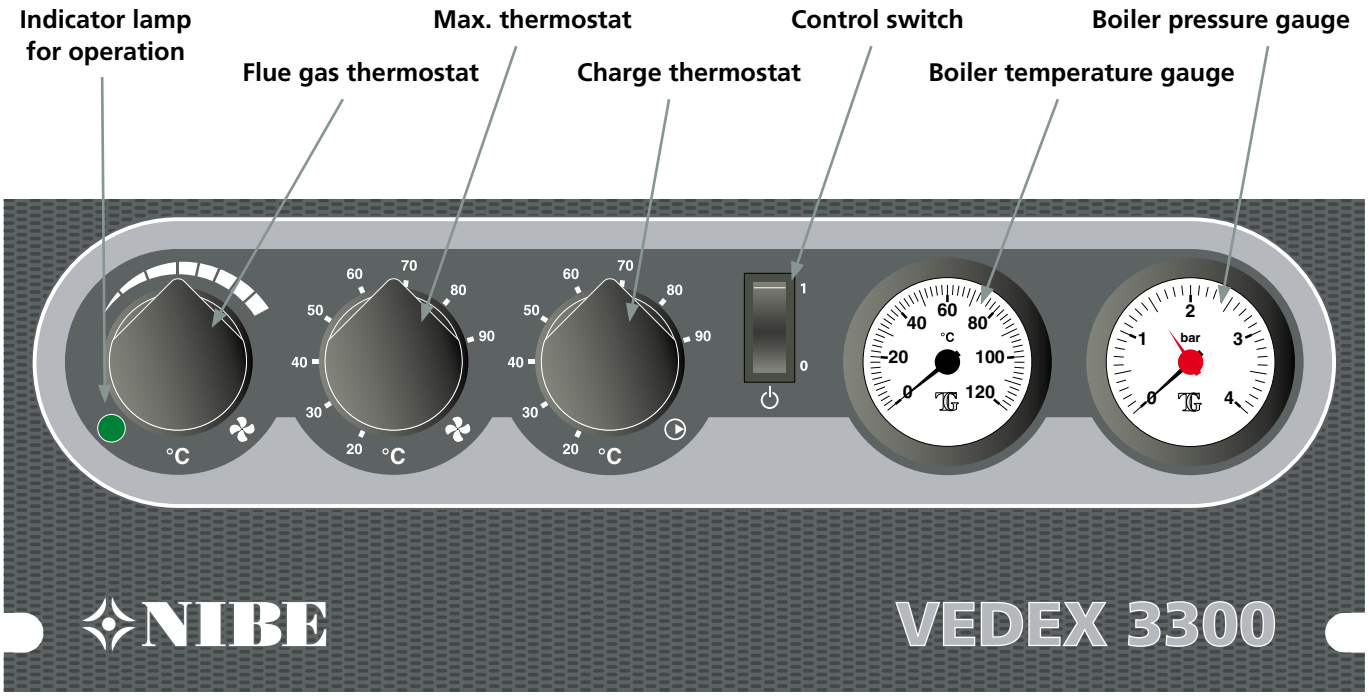
Abbreviations

HW	Hot water
CW	Cold water
SÄV	Safety valve
AV	Shut-off valve
WH	Water heater
EX	Expansion vessel
SV1	Shunt valve
SV2	Mixer valve
CP1	Charge pump
CP2	External circulation pump
RAD	Radiator circuit
LD1	Charger pack

Heating

Hot water is taken from the top of the boiler and routed to the accumulators. Return water from the accumulator tanks is lead via a charger pack to the bottom of the boiler. The hot water is led from the accumulators to the radiator circuit via a shunt valve (SV1), where the desired temperature to the radiators is maintained by mixing the hot accumulator water with the cooled return water from the radiator circuit.

General



Indicator lamp for operation

When the green light comes on, the flue gas thermostat's set temperature has been reached.

Flue gas thermostat

This thermostat starts and stops fans and any charge pumps during lighting and extinguishing phases. The thermostat is delivered connected for charge control by thermal valve. i.e. the flue gas thermostat only starts and stops the flue gas fan. To prevent stationary losses via VEDEX 3300, reconnection to charge control without thermal valve is recommended. The flue gas thermostat, together with the boiler thermostat, then starts and stops the charge pump.

Max. thermostat

This thermostat stops the fan when the boiler temperature exceeds the set value.

Charge thermostat

This**thermostat** starts and stops the charge pump at the set value.

Control switch

Operating current, on and off.

Boiler temperature gauge

The operating temperature of the boiler is indicated on the gauge which is graduated 0–120°C. It shows the temperature of the boiler water level with the flow line connection.

Boiler pressure gauge

The boiler's pressure is displayed here. The gauge is graduated 0 - 4 bar with a red mark at 1.5 bar.

Max. permitted pressure is 1.5 bar at 100°C.

For a closed system, the operating pressure varies during operation depending on the installation's varying temperature.

Settings, instructions and maintenance

Charge and circulation pump

If a charge or circulation pump is not in operation for en extended period of time, it should be started from time to time so that it does not jam.

Sweeping

The sweeping carried out by a chimney sweep includes all flue gas routes from the hearth to the top of the chimney. You can check the boiler's fire-affected surfaces and flue gas ducts yourself to determine how often the boiler should be swept.

Gas, which contains tar substances, builds up in the wood magazine. These substances condense on the walls of the wood magazine and are later burned off. This means that the walls of the wood magazine do not usually have to be cleaned. The convection part is cleaned by removing the top soot door (66), pulling up the turbulator and brushing clean. This should be done a few times between chimney sweep visits.

For optimum combustion and efficiency the boiler's secondary combustion chamber should be cleaned after about 15 additions of wood. The compartment is cleaned from the front via the lower door by pulling out the flame trough and brushing. Take care to remove any burnt on ash remains in the trough.

Also see "For the chimney sweep", under "Sweeping" .

Note!

Ash can still contain glowing embers after a long time. Therefore, always use a non-inflammable container when emptying ash and soot.

General instructions

The way the wood is chopped, its type and moisture content are all determining factors that affect the function and efficiency of the boiler.

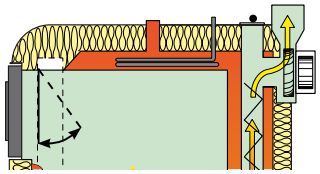
Adjust the size of the wood to fit the hearth. Suitable length of chopped wood for VEDEX 3300 is 0.5m.

The wood is placed on the ceramic grate.

The combustion process works by reverse combustion where the combustion gases are forced down through the grate by an induction fan. The fan is controlled by the flue gas temperature. A damper ensures that a self induced draught does not occur when the fan is off.

The fan works at two speeds which means that the highest speed occurs when adding wood and normal speed during operation.

A tilting smoke stop prevents blow back.



Always use dry wood. Wood with a high moisture content reduces the combustion temperature and causes increased amounts of environmentally harmful emissions as well as reducing efficiency.

Extremely dry wood can cause a large fire which can create large amounts of gas. In addition, there is a risk of flashover, which in turn causes irregular combustion. Carpentry off cuts can be used but should be mixed with other wood. All wood over 10 cm must be chopped. Only use untreated and clean wood.

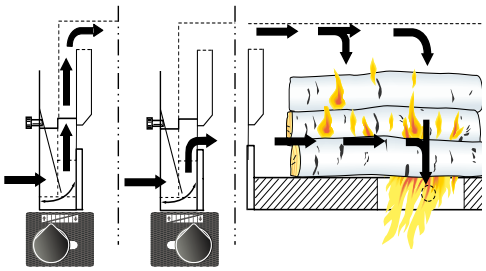
Combustible gases are created as the wood heats up. These burn at temperatures between 300 - 900°C. The gases make up 75% of the wood's energy content, the rest is in the created charcoal, which also eventually burns.

Final combustion occurs in the compartment under the grate after the supply of secondary air.

Primary air control

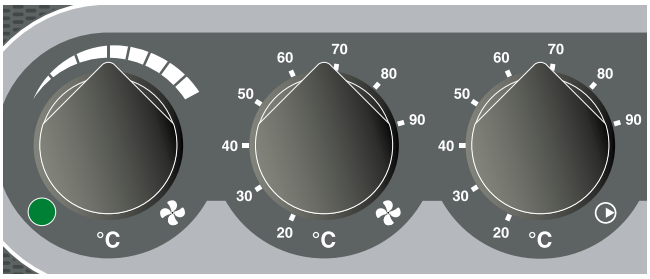
The control damper on the front of the boiler is used to distribute the air supply to the hearth.

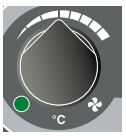
- In the left position the air supply is from the top of the combustion chamber.
- In the right-hand position, the air supply is from the lower part just above the ceramic grate in the hearth.
- In the central position the air is distributed equally from both inlets.



Boiler default settings

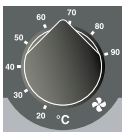
The instrument panel contains three thermostats.





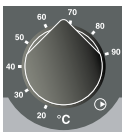
Fluegas thermostat

This thermostat senses the flue gas temperature. When the temperature has been reached and the filler door closed, the fan resumes normal speed. When firing is ended and the flue gas temperature has dropped, the fan is stopped by the thermostat.



Max.thermostat

This thermostat stops the fan when the boiler water temperature is too high.



Charge thermostat

This thermostat starts the charge pump at the set boiler water temperature.

Before adding the first pieces of wood, check that the boiler and the heating system are filled with water, and that the flue gas thermometer is installed in the flue pipe. Then make settings as follows.

- Set the flue gas thermostat to position:
- Set the max. thermostat to 90 °C.
- Set the charge thermostat to 70 °C.
- Adjust the primary air damper as follows.

1 Hard and mixed wood

Adjust the damper to the right.

2 Softwood

Adjust the damper to the left.

For a newly installed boiler, new adjustments should be made if combustion is not efficient and poor or if another type of wood is used. Also see section "Wood firing".

Wood firing

Lighting instructions

It is important that initial firing is carried out carefully in a new boiler so that any remaining crystallisation water in the ceramics is condensed slowly to prevent cracking.

- Add approximately 4 kg of finely chopped kindling wood and then tightly screwed up newspapers on top. Light the newspaper and leave the filler door ajar.
- Wait until the wood has caught fire properly (flue gas temperature approximately 130 – 150°C) and the green light comes on.
- Close the door and let the fire burn to a bed of embers, approximately 30 – 45 minutes depending on the amount of wood.
- Once a bed of embers has been created, more wood can be added.
- Check that the flue gas temperature rises, this is a sign that combustion has started.

The boiler is now in normal operating mode.

- Add more wood when a bed of embers remains at the bottom of the hearth.

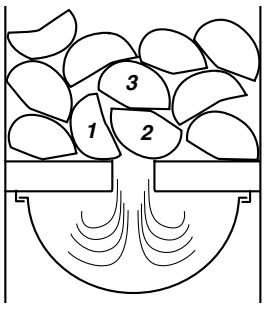
Adding wood

Add wood via the filler door. When this door is opened, a microswitch is affected, which, in, turn increases the speed of the fan.

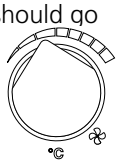
It is important that the amount of fuel is adjusted according to the temperature levels in the accumulator system so that it does not become overcharged.

Even out the embers before adding more wood. Then close the filler door. The speed of the fan is now slowed and normal operation resumed.

VEDEX 3300 is designed for 0.5 m long pieces of wood. Stack the wood well when adding. Start by laying three logs as marked in the image. Position the logs so that they do not obstruct the grate hole. If shorter pieces of wood are used, stack these over the grate hole towards the rear wall.



- When the wood in the boiler has been burned and the flue gas temperature drops to 80 – 85 °C, and a minimal bed of embers remains, the green light should go out, if not, readjust the flue gas thermostat.
  It is now set and should not need further adjustment. At the next firing procedure, the green light automatically comes on when the flue gas temperature has reached approximately 80 – 85°C.



Readjustment

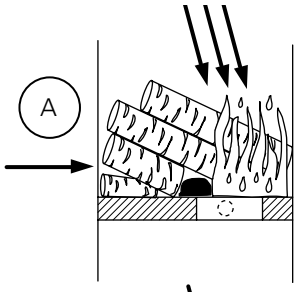
The flame can be checked through the sight glass after about 30 minutes operation. The colour of the flame should then be yellow with a light blue tint.

The following points should be observed for VEDEX 3300 to perform optimally:

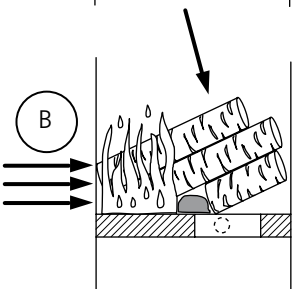
- Follow the lighting procedure by checking the flue gas temperature.
- The fan should never stop during the firing cycle.
- When the accumulator is fully charged, there should no longer be any wood in the wood magazine.
- Never open the combustion chamber door during operation.
- The combustion of wood can vary depending on its moisture content and type as well as on the position of the primary air damper.

  If the wood is not fed downwards and the flue gas temperature is low, this may be due to an insufficient amount of air being drawn in through the primary air ducts. Adjust the damper to the left.

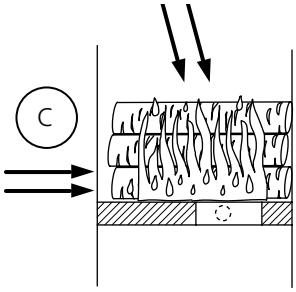
If the wood burns as in case (A), the air supply is too great from the top and too low from the middle.



If the wood burns as in case (A), the air supply is too great from the middle and too low from the top.



The correct air flow as per case (C) gives the most efficient combustion.



It is not necessary to adjust the primary air damper if any of cases fallen (A) and (B) occur on the odd occasion.

General information for the installer

Boiler room

The boiler room must be built in accordance with applicable building regulations.

Provision for good air supply. The boiler room's air intake must be as large as the smoke pipe duct.

Chimney

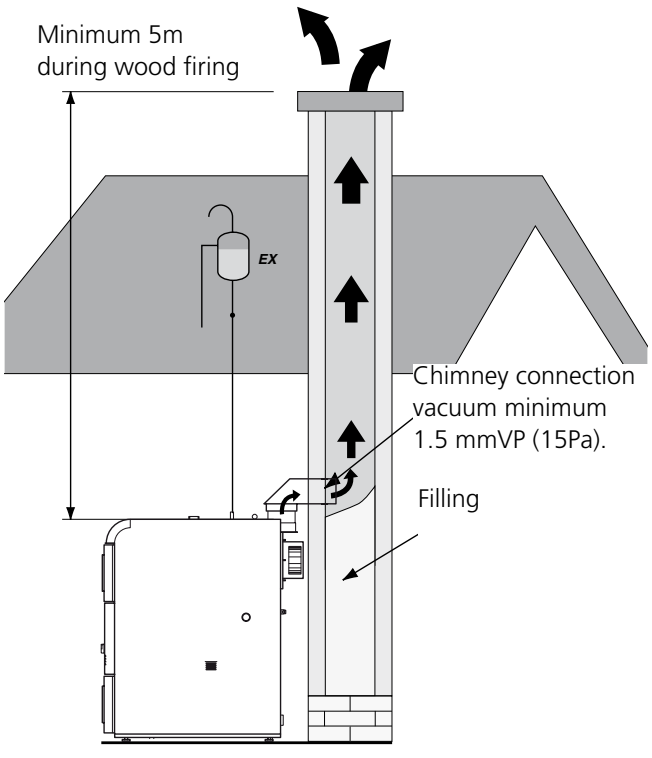
VEDEX 3300 has a vertical flue pipe connection with an external diameter of 133 mm. Angled flue pipe supplied as standard.

Different chimney heights are required depending on version. In addition, a number of other factors, for example, wind and terrain conditions, nearby buildings etc, can affect the draught conditions of the chimney. Minimum chimney draught for satisfactory wood firing is 15 Pa.

The following table showing several different versions of chimney is a recommendation, however, the aforementioned factors must also be taken into consideration.

Material	Area	Minimum height
Steel pipe	Ø 125 mm	5.0 m
Brick	140 x 140 mm	5.0 m

Many older boilers have the flue duct located down below and will have been connected to the chimney near to the floor. If the new boiler is to be connected higher up on the chimney the lower non-active part of the chimney pipe should be filled with sand or similar.



Note!

Ensure that sweeping can be carried out in accordance with the applicable regulations. If in doubt, contact a chimney sweep.

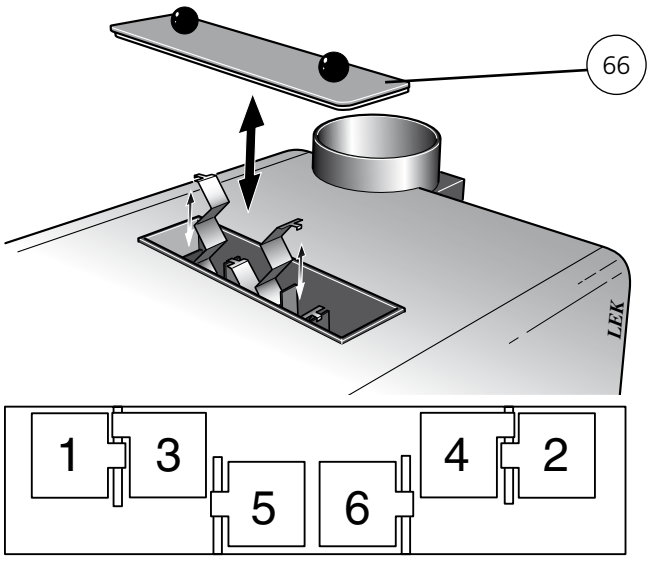
Assembly

VEDEX 3300 has inlets for primary air at the front and secondary air on the sides of the boiler. Therefore, always leave a space of at least a metre from combustible material. In unfavourable cases "puffs" from combustion can discharge sparks.

Turbulators

Six turbulators are supplied with boiler. These are located in the ducts in the boiler's convection part as illustrated. The turbulators affect the turbulence of the flue gases, which means that a greater amount of energy is transferred to the boiler water. The temperature in certain chimneys may become so low that there may be a risk of condensation build-up in the smoke duct. To increase the temperature in the chimney the turbulators can be removed, one at a time as illustrated. For each turbulator that is removed, the flue gas temperature rises from the boiler by 15 - 25°C.

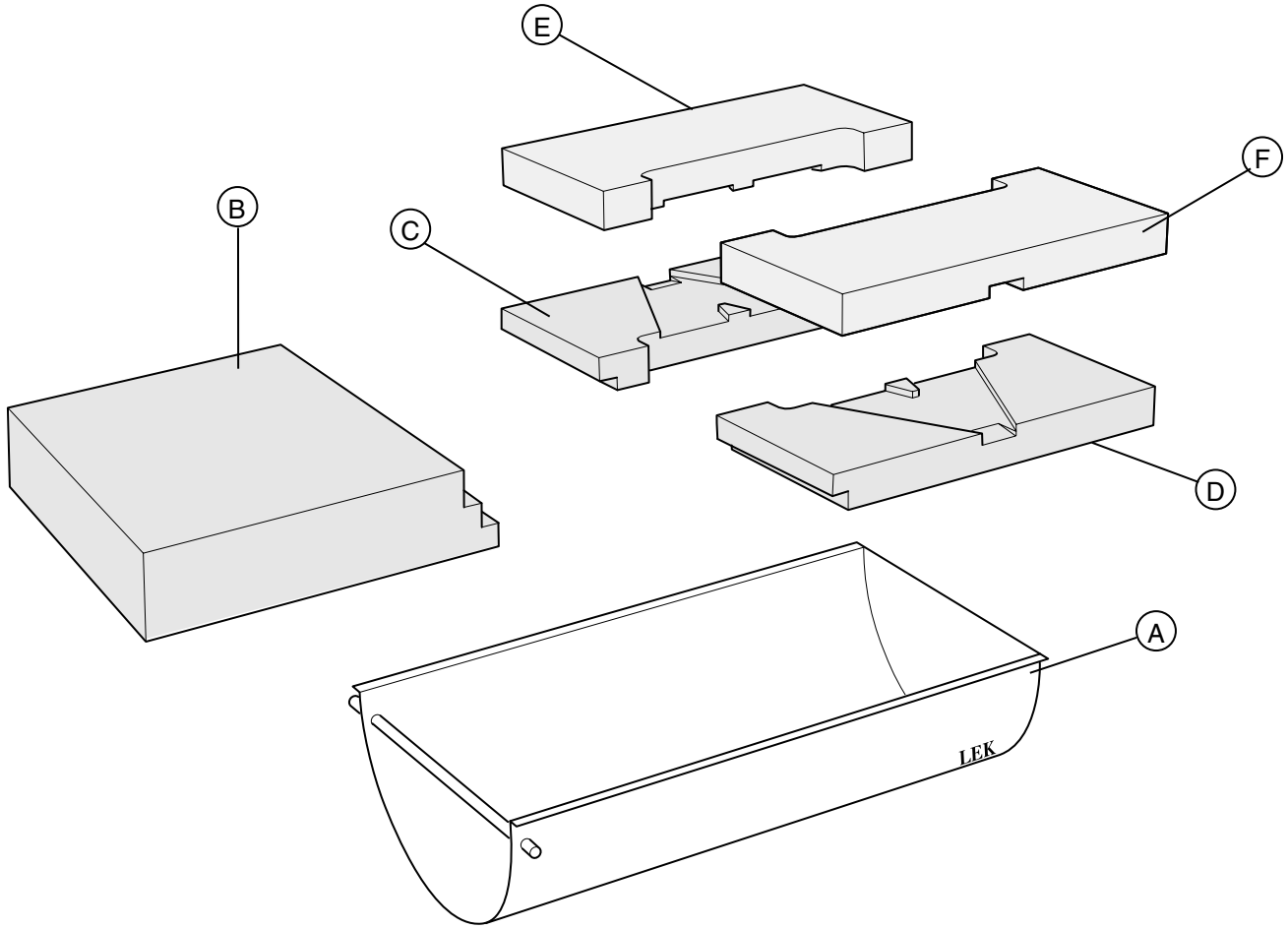
Remove the turbulators in number order until the flue gas temperature in the chimney is correct.



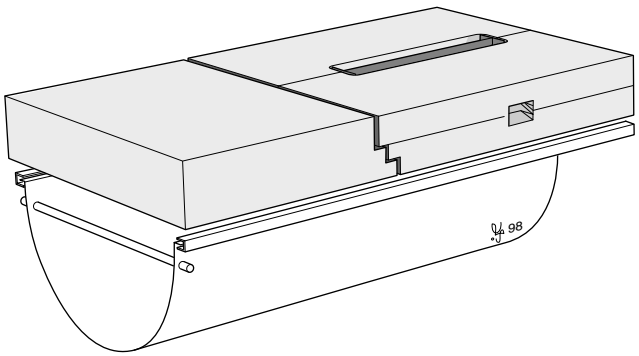
Note!

The flue gas temperature must not drop below 65°C 0.5 m below chimney opening.

Installing ceramics



Pre-installed ceramic kit



Ceramic grate

Place the ceramic inserts in through the filler door. First position the front stone (B). Then position the rear stones (C) and (D) followed by stones (E) and (F).

Flame trough

Open the combustion chamber door. Slide in the flame trough (A) on its guides under the ceramic grate.

Note! The trough must be slid all the way into the chamber.

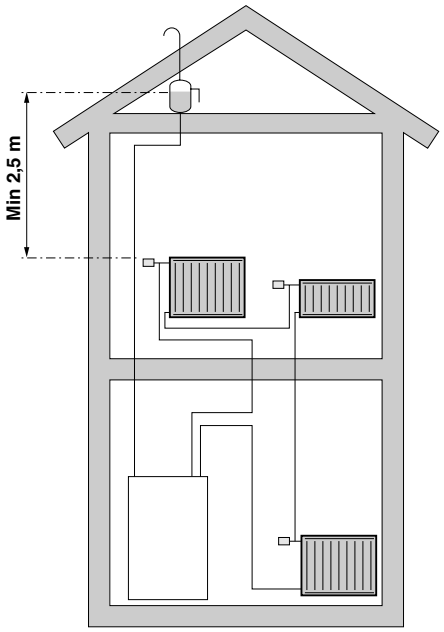
Pipe installation

Connection

The pipe installation must be carried out in accordance with current norms. Internal support bushes should be fitted when a steel pipe or annealed copper pipe is used.

The overflow pipe from any of the safety valves must be routed to a floor drain to prevent hot water splashes when checking the valves or when bleeding the boiler. The outlet of the overflow pipe should be visible.

If the heating installation has an open expansion tank, the distance between the highest radiator and the expansion tank must not be less than 2.5 m.



Note!

The pipe work must be flushed before the boiler is connected, so that any contaminants do not damage the component parts.

Flue gas thermometer

VEDEX 3300 is supplied with an enclosed flue gas thermometer which must be installed in the flue gas door outlet.

Filling

Fill the boiler with water using a fixed filler line to one of the expansion connections or a hose in the drain valve.

⚠WARNING!

If filling via the radiator circuit, the shunt valve must be in a central position. Otherwise there is a risk of cracking one of the radiators.

Draining

The drain valve is installed next to connection (84). Drain by connecting a hose to the drain valve.

Cooling coil

VEDEX 3300 is supplied with cooling coil (22) for connection to a temperature limiting valve. Refer to the manufacturer's instructions when installing.

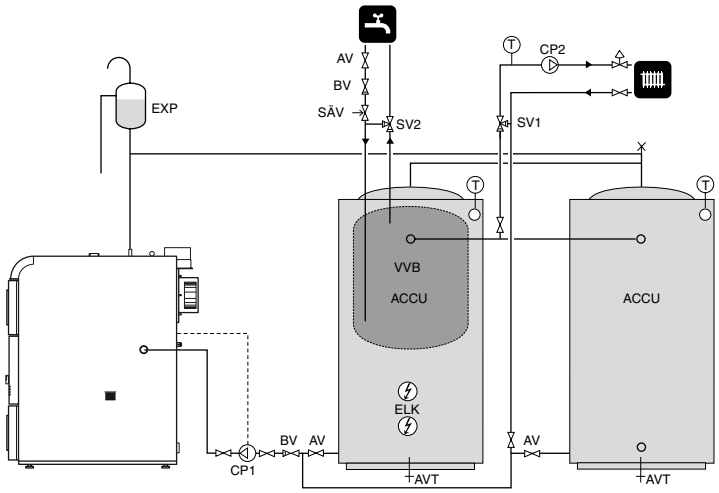
Environmentally friendly approved

To meet the environmentally approved requirements during wood firing an accumulator tank of at least 1000 litres must be installed with the boiler.

Docking to the accumulator

Docking to thermal outlet with several tanks and open expansion tank

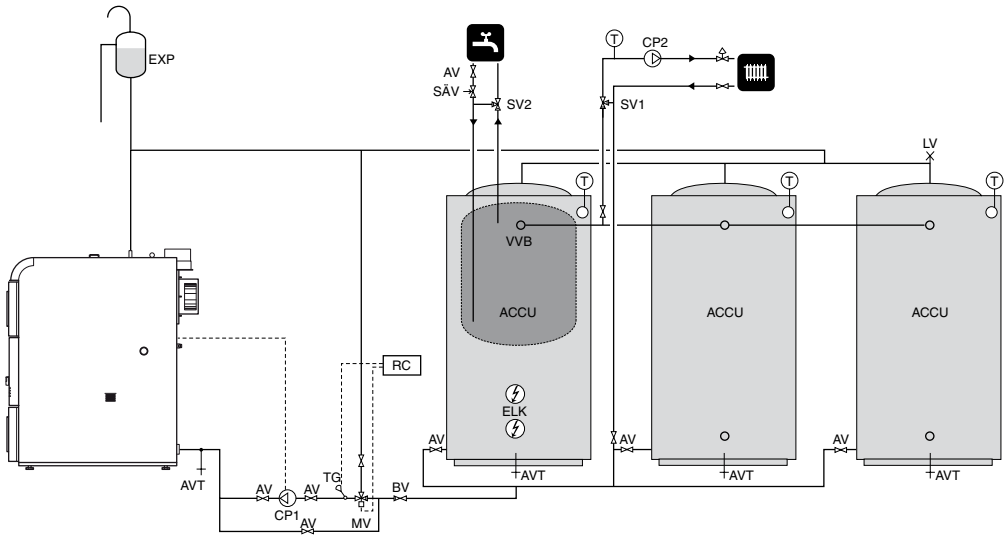
Note! Reconnection is required in the electrical panel for this type of docking. See "Electrical installation" – "Reconnection".



When the boiler's temperature and flue gas temperature exceeds the set temperature on the relevant thermostat, the charge pump starts, which then transfers heat from the boiler to the accumulator tanks. Once all the wood has been burned and the flue gas temperature drops, the charge pump stops automatically.

The return line that is connected to the special thermal outlet distributes the return temperature in the boiler in such a way as to eliminate the risk of condensation. Charger pack 1 is recommended for this connection.

Docking to several tanks with thermal or electronic charge control and open expansion tank



When the boiler's temperature exceeds the set charge temperature (for example, 75°C) the charge pump starts, which then transfers heat from the boiler to the accumulator. The electronic charge control ensures that the water temperature to the bottom of the boiler does not drop so much that there is a risk of condensation.
Charger pack 2 is recommended for this connection.

Abbreviations

AV Shut-off valve
BV Check valve
CP1 Charge pump
CP2 Circulation pump
ELK Electrical cassette/immersion heater
EXP Expansion tank
LV Venting valve
MV Motor valve
RC Control box
SV1 Shunt valve
SV2 Mixer valve
SÄV Safety valve
TG Temperature sensor
VVB Hot water heater

Electrical installation

Connection

The boiler must be connected under the supervision of an authorised electrician. The connection cable for electrical connection is on the reverse of the boiler. There is a connection area for electrical connection behind the front panel (33).

The charge pump is powered from the electrical socket on the reverse of the boiler, max. total current output is 10 A. Min cable area 1.5 mm^2.

Electrical function

Switch (45) set to position "0" means that the boiler is off. Position "1" is the normal operating position.

The flue gas thermostat (2) controls the boiler fan, and, at reconnection, also the charge pump.

Max. thermostat (3) only controls the boiler's fan and charge thermostat (19) only controls the external charge pump.

When the green light comes on, the flue gas thermostat's set temperature has been reached.

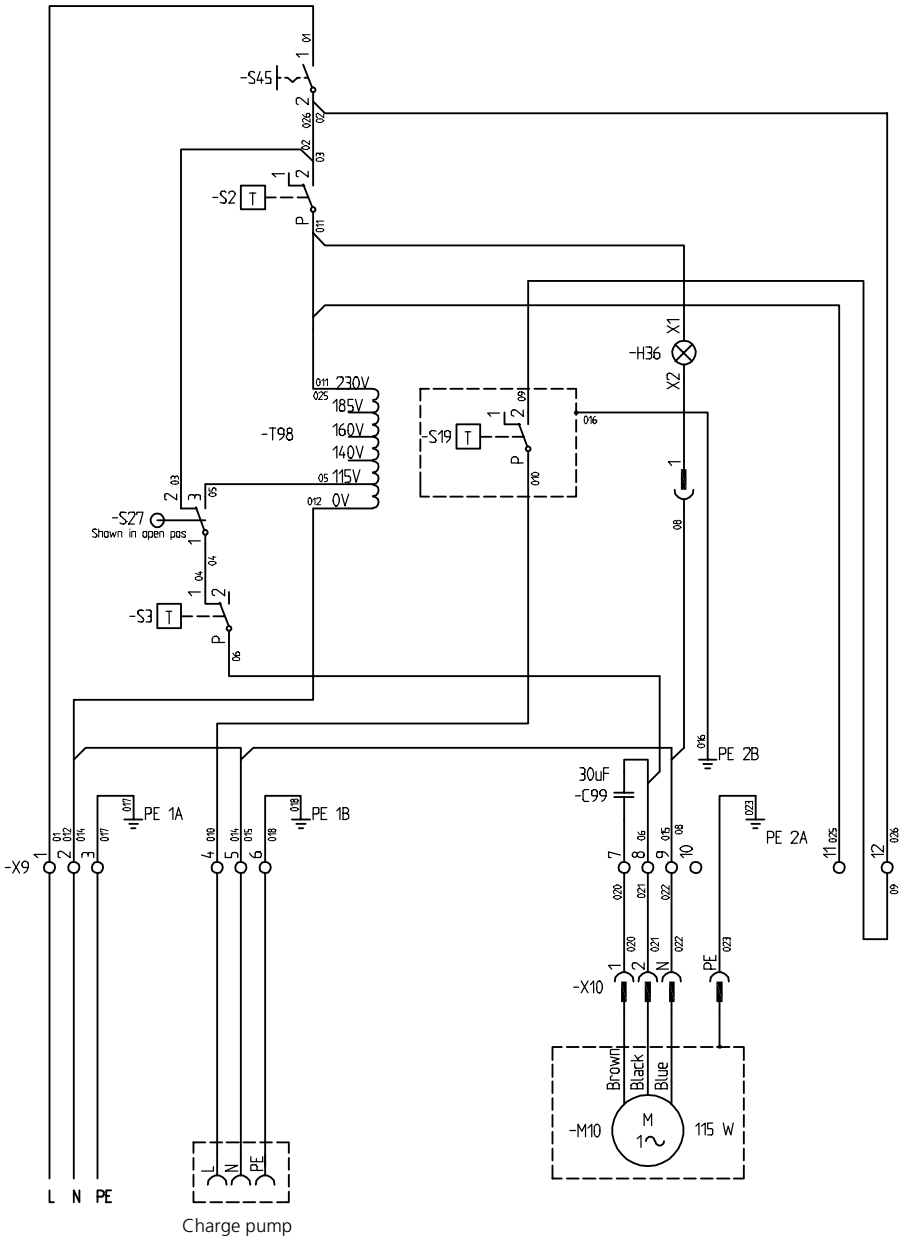
Reconnection

The thermostat is delivered connected for charge control by thermal valve. i.e. the flue gas thermostat only starts and stops the flue gas fan.

To prevent stationary losses via VEDEX 3300, reconnection to charge control without thermal valve is recommended. The flue gas thermostat, together with the boiler thermostat, then starts and stops the charge pump.

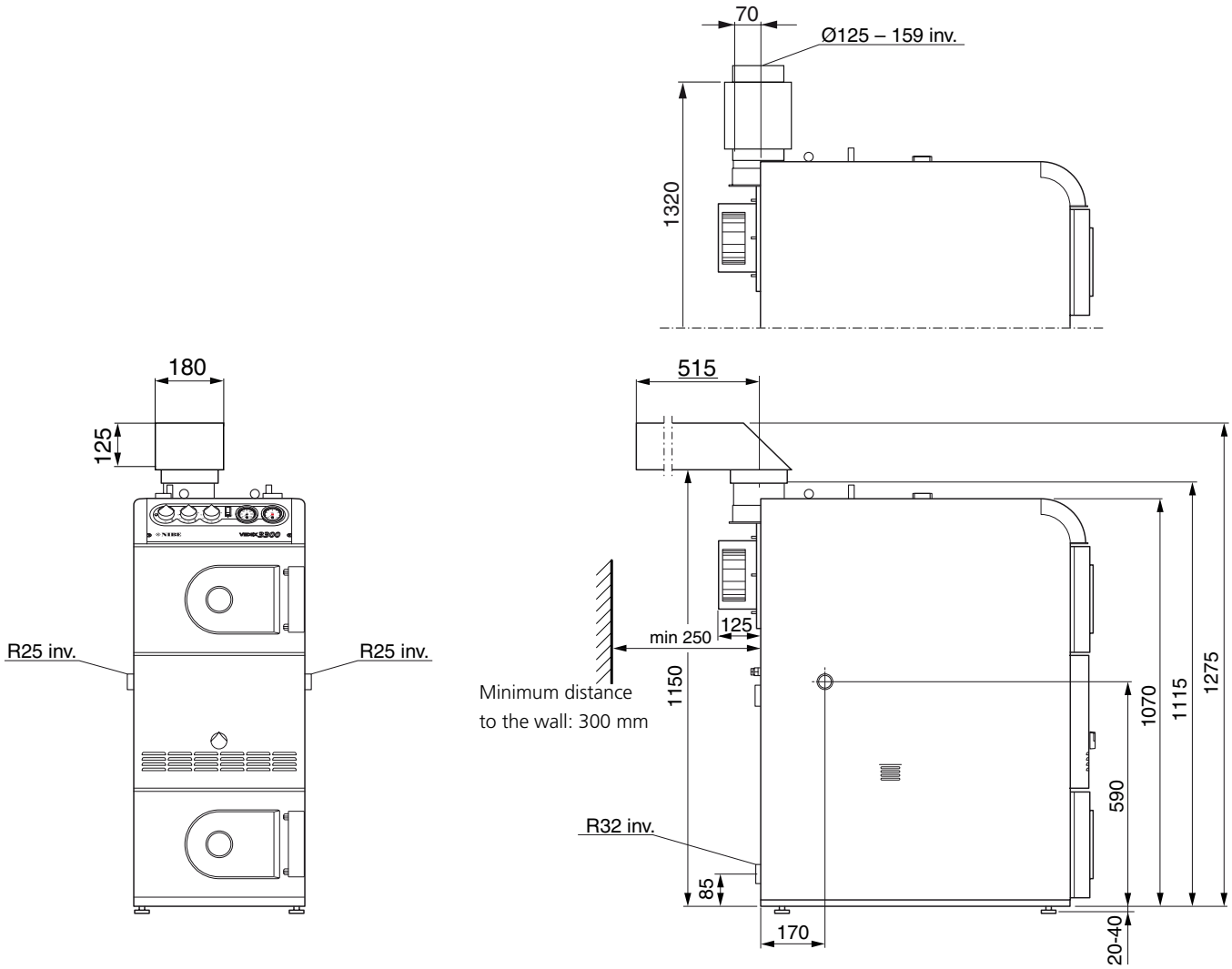
Reconnection must be carried out when docking to **thermal outlet**. Carry out reconnection by moving cable 09 from terminal 12 to terminal 11 on terminal block -X9.

Electrical circuit diagram

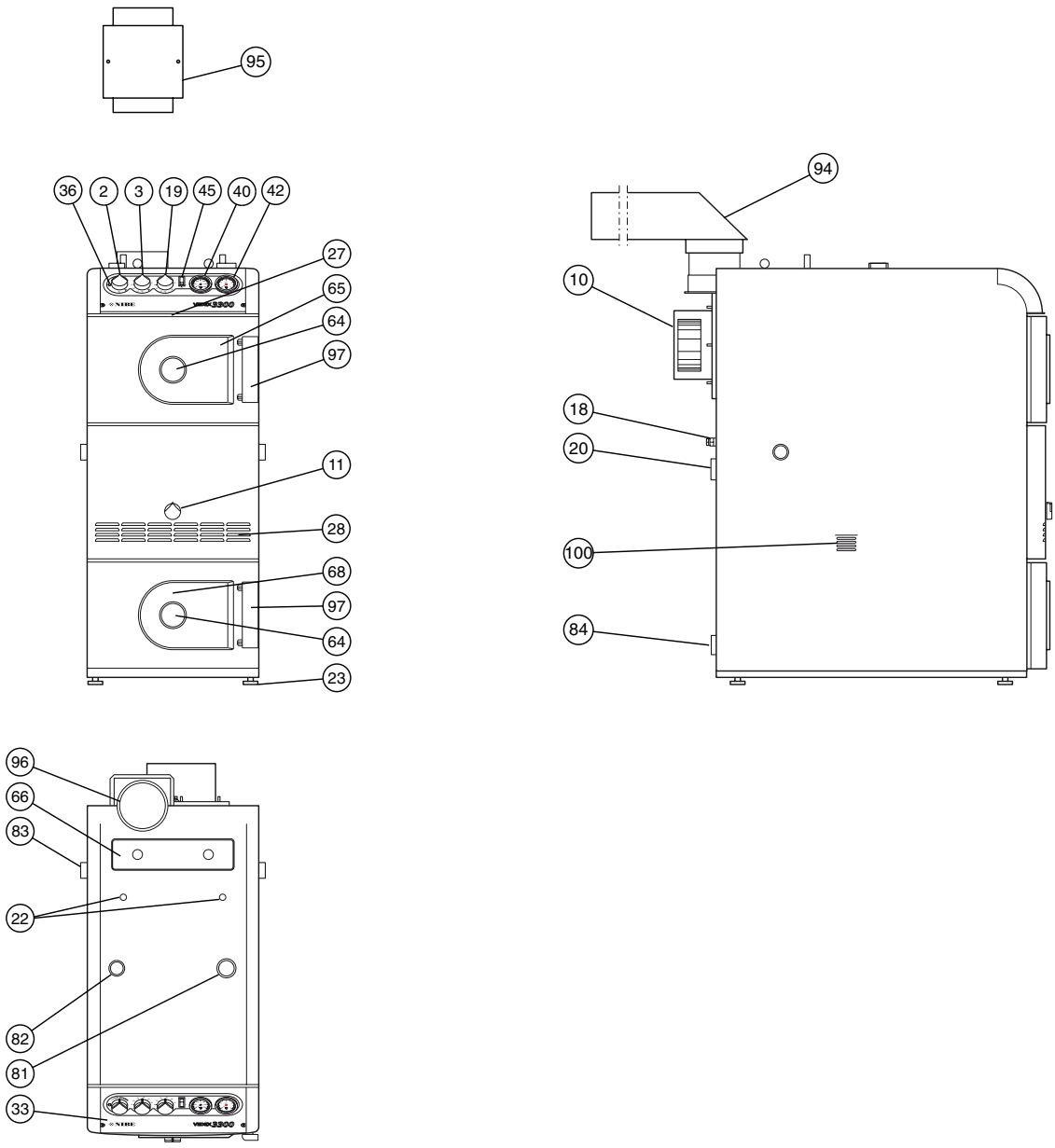


Technical specifications

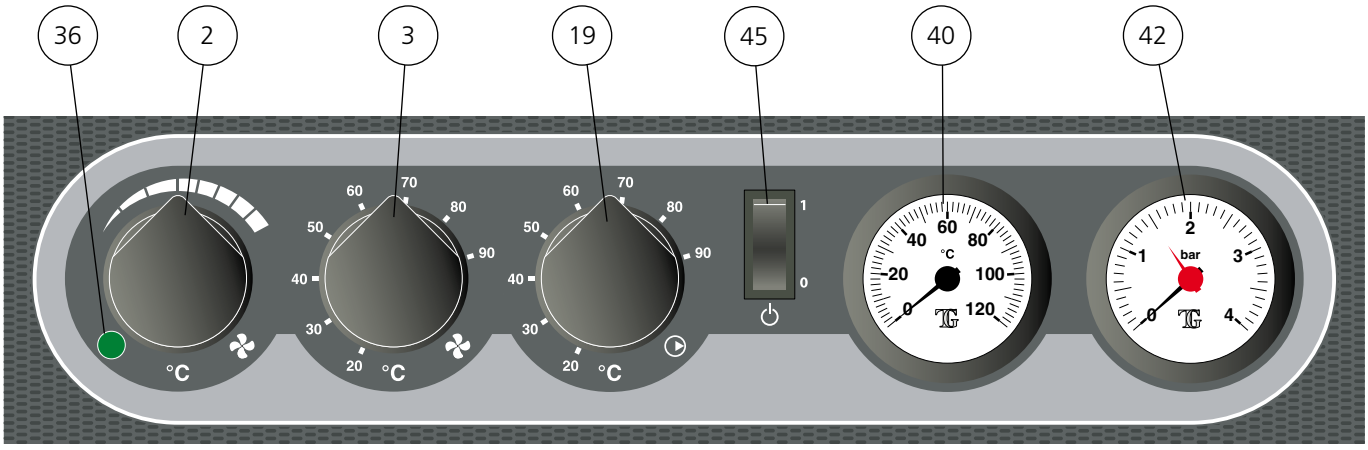
Dimensions



Component location, boiler section



Component location, front panel



List of components

2 Flue gas thermostat
3 Max. thermostat
10 Fan
11 Adjusting primary air
18 Connection cable electricity
19 Charge thermostat
20 Electrical socket for charge pump
22 Cooling coil Ø 15 ext.
23 Adjustable feet (20 – 40 mm)
27 Microswitch
28 Primary air inlet
33 Front panel
36 Indicator lamp, operation
40 Thermometer
42 Manometer
45 Control switch
64 Sight glass
65 Filler door
66 Soot door for convection part
68 Combustion door
81 Flow line R32 int.
82 Expansion connection R25 int.
83 Return connection, thermal R25 int.
84 Return connection, or drain connection R32 int.
94 Angled flue pipe, (standard)
95 Vertical flue pipe, (accessory)
96 Flue pipe connection Ø 133 ext.
97 Door handle
98 Fan transformer
99 Fan capacitor
100 Secondary air inlet (Min 0.5m from combustible material on both sides)

Enclosed kit

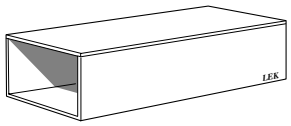
1 x Soot brush
1 x Soot brush shaft
1 x Ash scraper
1 x Tapping valve
1 x Ash shovel
1 x Flue gas thermometer
1 x Soot door with gasket
1 x Angled flue pipe
6 x Turbulators
1 x Soot panel
1 x Installation and Maintenance Instructions

Accessories

Flue pipe extension for angled flue pipe

Rectangular flue pipe extension for angled flue pipe.

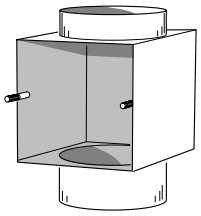
Dim ext. 180 x 123 mm
Length 750 mm
RSK No. 621 07 40



Vertical flue pipe

For vertical chimney connections this unit is used for the vertical flue pipe instead of the supplied angled flue pipe.

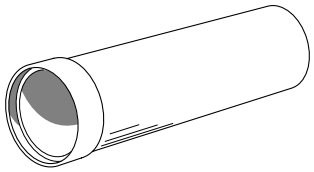
Collar	Ø int.	159 mm
Lower connector	Ø int.	139 mm
	Ø ext.	144 mm
RSK No.	621 07 37	



Flue pipe extension for vertical flue pipe

Round flue pipe extension for vertical flue pipe.

Ø int. 125 mm
Ø ext. 133 mm
Length 750 mm
RSK No. 621 07 39



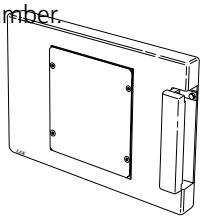
Pellet combustion door

Designed to replace the combustion chamber.

Enclosed:

1 x cover for fan outlet
2 x cover discs for secondary air inlet

Part no. 089 878



Charger pack 1 (Part no. 089 872)

Contents:

1 x non-return valve connection 25
1 x charge pump, 6 mvp with shutoff valves
1 x shunt valve for heating system connection 25
1 x circulation pump for heating system, 6 mvp with shut-off valves
2 x ball valves connection 25
2 x shutoff valves 1/2"
1 x 6 kW immersion heater with control
1 x cold and hot water armature assembly

Charger pack 2 (Part no. 089 873)

Contents:

1 x non-return valve connection 25
1 x 3-way motor valve connection 25
1 x temperature sensor, 60 - 90 °C
1 x electronic control box
1 x charge pump, 6 mvp with shutoff valves
1 x shunt valve for heating system connection 25
1 x circulation pump for heating system, 6 mvp with shut-off valves
2 x ball valves connection 25
2 x shutoff valves 1/2"
1 x 6 kW immersion heater with control
1 x cold and hot water armature assembly

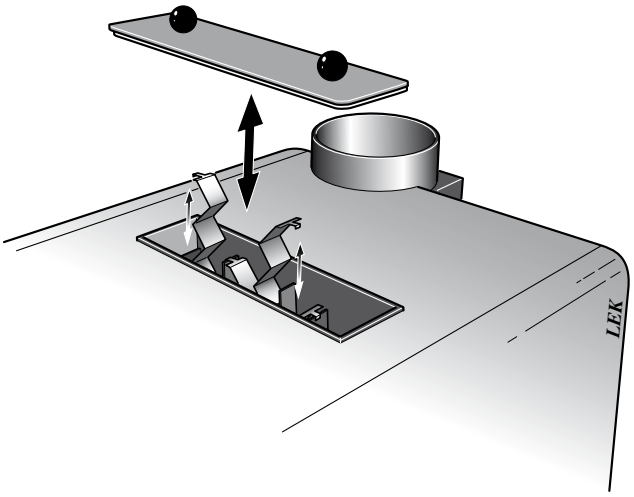
Technical specifications

Height	1 070 mm (increases 15 – 40 mm for adjustable feet)
Width	450 mm
Depth	880 mm
Weight	290 kg
Boiler water volume	65 litres
Voltage	230 V
Average output during wood firing	33 kW
Wood magazine volume	95 litres
Wood magazine width	300 mm
Wood magazine depth	550 mm
Filler door width	300 mm
Filler door height	250 mm
Max. permitted total current for connected units	10 A
Max. operating pressure/design pressure boiler	150/1,5 kPa/bar
Wood length	0,5 m
Fan	115 W
RSK number	620 13 94

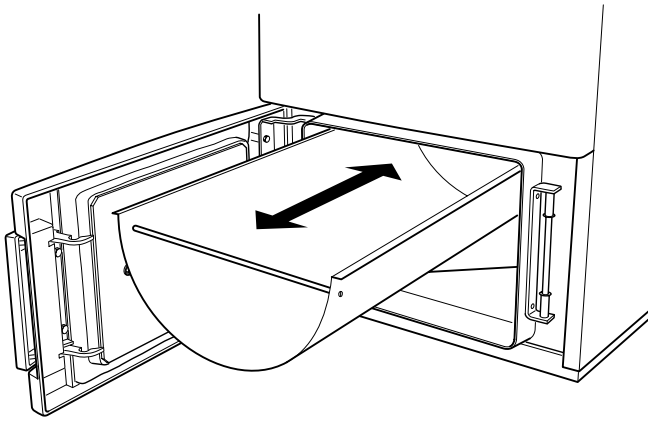
Sweeping

Sweeping description

- Remove the cover from the mounting points in the boiler.
- Lift out the turbulators from the convection part.
- Sweep the convection part.
- Reinstall the turbulators.
- Reinstall the soot door.



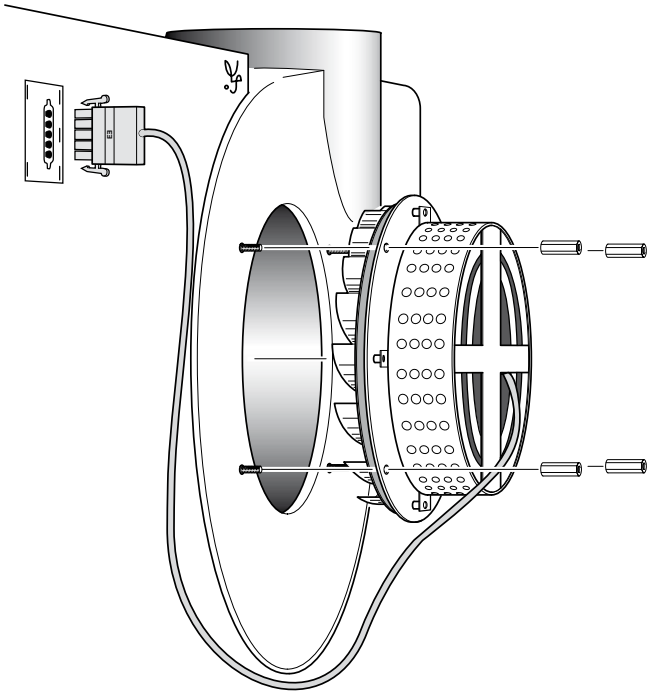
- Open the combustion chamber door (68).
- Pull out the flame trough.
- Empty the trough and clean the ash out. Take care to remove any burnt on ash remains in the trough.
- Clean the chamber.
- Position the trough in place and close the door.



Fan

The fan is a central part of VEDEX 3300 and should be treated with care. The fan should be removed and cleaned about twice a year for optimum function and a long service life.

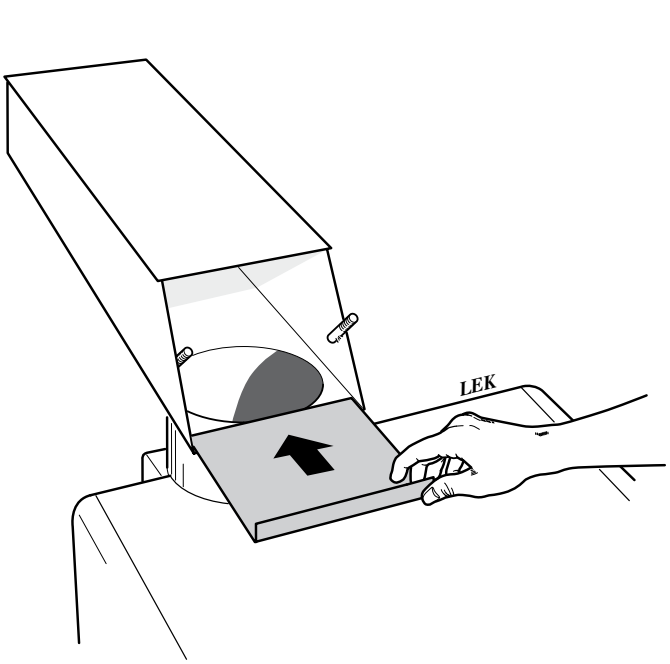
- Check that the boiler is off and that no embers are in the combustion chamber.
- Disconnect the fan from the electrical socket on the boiler.
- Remove the long nuts securing the fan to the boiler.
- Clean the fan blades carefully to prevent deforming them.
- Reinstall the fan and connect the electrical cable.

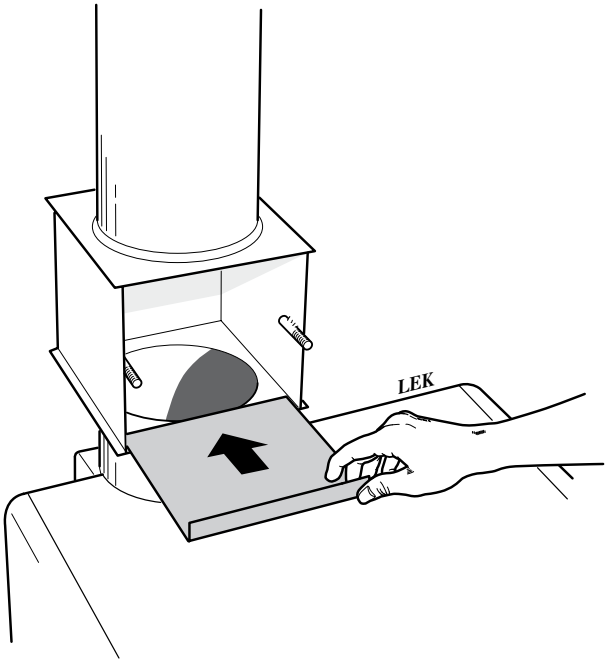


Cover plate

To prevent soot from getting into the flue gas fan when sweeping, use the supplied cover plate as follows:

- Remove the soot door.
- Insert the cover plate over the hole as illustrated.
- Reinstall the soot door to prevent soot exiting when sweeping.
- Do not forget to remove the cover plate when sweeping is complete.





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